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The Impact of U.S. Visa Policy on the Department of Energy Office of Science Missions

Senate Foreign Relations Committee Roundtable Discussion
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I welcome this opportunity to discuss the impacts of the visa policies on the science missions of the Department of Energy and its National Laboratories. While many of our issues are similar to those expressed by the National Science Foundation, our emphasis is somewhat different, and I appreciate the opportunity to discuss this with you.

Through the Office of Science, the Department of Energy provides the largest fraction of federal support for the physical sciences in the U.S. (~ 42%). Our focus is on achieving the very best research results with the very best scientists using the very best equipment and tools available. The primary vehicle through which this work is accomplished is our complex of 10 National Laboratories where unique machines, equipment and tools have been developed, constructed and operated by the scientific community in such a way that remarkable new advances in science are accomplished. The Office of Science funds undergraduate and graduate students, post doctoral scientists, faculty, and researchers from around the world. The latter not only use these facilities and machines to advance science, but, perhaps more significantly, have been, and are, integrally involved in the research and development, design, construction, and the operation of these machines. For example, at our major high energy physics laboratories, Fermi Lab and the Stanford Linear Accelerator Center, the major experiments are run by teams of physicists and engineers, approximately half of whom are foreign. They contribute to building, operating and maintaining the experiments and equipment, and to analyzing and evaluating the data and science produced. Access to this body of talent, so many of whom are foreign born, is critically important to our scientific leadership position in the world.

In order to stay as world leader, we must be able to attract the best and brightest students and scientists from all over the world. In the 1980's and 1990's, competition for world leadership in science greatly intensified, as large investments were made in Europe and Japan, as well as Russia, China and other countries. At the same time, the nature of the facilities to do cutting edge research increased in complexity and cost, making collaborative investments a necessity. We have reached the point where no one country automatically has the economic or intellectual resources to "go it alone". To retain our leadership position in the world we must continue to attract participants from all over the world.

Indeed, the future of science is a global enterprise. An example, ITER, is a fusion energy project, one of the highest priorities of this Administration. Its success is dependent upon international collaborations. Fusion research is carried out worldwide with the major programs involving the U.S., the European Union, Japan, the Russian Federation, the People's Republic of China, and the Republic of Korea.

The National Laboratory Foreign Visit and Assignments Statistics

Let me share with you some statistics that illustrate the scope of our foreign interactions. We have a foreign visit and assignment tracking system at our laboratories. During calendar year 2004, there were approximately 25,000 entries into the system for our 10 laboratories. Of these, almost three quarters (approximately 17,500) were on assignments where their cumulative stay was over 30 days. In fact, many of these researchers are asked to stay on for years, and they do. Some become spokespersons for major experiments at our high energy laboratories. Others come to do experiments at our light sources and neutron facilities and then return to their countries to continue their research or to teach. We receive an additional benefit because of the positive views they express of their opportunities in our country and the encouragement to their students to study and perform research here.

Visa delays have impacted us over the past number of years resulting in delays to research projects, down time on experiments, reduced participation in collaborative efforts and personal frustrations, such as fear of traveling to home countries because a visa may not be granted for return.

Impacts of Visa Delays to Science and Scientists

Importance of foreign collaboration in design, construction and operation of experiments and equipment: As noted earlier, many foreign researchers have been integrally involved in the research and development, design, construction, and operation of the world class machines at our laboratories, as well as the design and operation of the experiments. Examples:

1) Most of the muon detector of the DZero experiment at the Tevatron at Fermi Lab was built in Russia. Russian physicists need to be at Fermi Lab to maintain and operate the system on behalf of the entire collaboration. There have been several occasions when planned visits were impacted by visa delays. While the collaboration managed the issues, there were real concerns that the researchers would need to turn off the detector during the delays. One of the key physics searches at the Tevatron, that is, the search for single top quark production, was delayed for several months because of delays in the receipt of the visa for a critical hire.

2) Meetings designed to advance fusion energy research planning and experimental designs have been delayed or inadequately attended because of visa delays, primarily for the Russian and Chinese participants. The success of international fusion programs (e.g.ITER) is dependent on full participation from the world wide community of scientists and engineers. Not only are many technical presentation and topical discussions held, but these meetings are the venues where designs and plans for new experiments and tools to advance fusion are initiated. The success of ITER will rely upon our ability to re-energize and get full participation again in these meetings.

3) A Brookhaven National Laboratory staff member of Russian origin went to CERN on lab business from June – October 2004, but was delayed an extra 2 months in returning because of visa delays. This person was critical to success of an experiment at the RHIC facility. Because of funding uncertainties, the experiments were delayed. However, there could well have been a serious outcry from the researchers if the delay in getting this person back into the country had been the only reason for the delay to the experiment.

4) Finally, we have received anecdotal information from Russian scientists who have refused to work on some U.S. experiments, preferring CERN or Japan facilities, where the experience with obtaining visas has been more positive. This erodes our leadership position in scientific endeavors.

Impacts to students who do research funded by the Office of Science: As others have noted, the country is experiencing a decline in the numbers of foreign students who come to the U.S. to obtain undergraduate and advanced degrees. These are students who should be able to depend upon being able to use the facilities at our National Laboratories to advance their studies, and to do the research that will provide them with their higher degrees in a timely manner. However, a graduate student at the National Central University in Taiwan, who was being co-advised by a Brookhaven employee and was doing research work at Brookhaven, went to a Quark Matter meeting in France in July 2002. He was then unable to return to Brookhaven for 11 months due to visa delays. This delayed his graduation, his publication and his career opportunities.

Another anecdotal example involves a Russian student who waited 10 months for visa renewal to re-enter the U.S. This person was conducting Ph.D. thesis research at the University of Texas in Austin with funding from the fusion energy program. He had to return to Russia for family reasons. While he continued to do his thesis research remotely, before he could return to finish his work and take his examinations, he needed to renew his visa, which took over 10 months. Thus, his degree and opportunities to enter into employment in his field were similarly delayed.

While these are just two specific examples, and I understand that such situations are not occurring to the extent that they did several years ago as a result of the improvements that have been made, I nonetheless offer these examples to help us keep in mind that we want to continue to find ways to help these scientists achieve their educational goals so that they can become part of the global scientific community in a timely fashion. In addition, whether they work in the U.S. or in another country, we want them to express positive views of their educational and research opportunities within the U.S.

Impacts on Conferences: Conferences and international meetings are vital to the exchange of scientific information. There have been examples of under participation at significant conferences, such as those designed to advance fusion energy and ITER. Attendance at the Lepton-Photon 2003 Conference, the premier international meeting in high energy physics was significantly down when it was held at Fermi Lab and plenary speakers from Russia and China were unable to obtain visas. The Division of Plasma Physics Meeting in Albuquerque, N.M. suffered when a leading scientific speaker, who is a full member of the Russian Academy of Science, was unable to obtain a visa resulting in the cancellation of an exciting presentation. In addition, strategic decisions have been made to hold meetings in other countries

where visa issues were not as difficult. The IAEA Fusion Energy Conference has not been held in the U.S. for many years. As a final example, the organizer of the major Quark Matter 2004 meeting, held in Oakland, California, indicated that they had a large number of physicists from China, Russia and India who registered but could not attend, because of difficulties obtaining visas. Many international conferences seek the sponsorship of the International Union of Pure and Applied Physics, which carries a condition that the conference be open to all researchers and nations. Again, this tends to drive conference planners to look outside the U.S. to ensure sponsorship and full participation.

Fortunately, because of the recent improvements in the visa process, Russian and Chinese colleagues are now agreeing to consider visiting the U.S. fusion facilities and the opportunity for the U.S. to host international fusion energy and other scientific meetings is becoming much more realistic.

Improvements to Visa Processes

The above examples are shared to help us understand that the visa policies have had some negative impacts on scientific advancement. I believe that there have been substantial improvements in the visa process partly because of the concerns when the above examples and other experiences were highlighted during the past years.

Foreign visitors and employees to our National Laboratories and research programs are experiencing faster turn around times for their visas, and there is greater clarity with respect the timing of the process! Scientists can now more adequately plan for their visa requirements. Not only are we seeing the visas being granted more quickly, but also they are being granted within the time frames that are advertised. Our scientists do not expect to be granted a visa overnight, but it helps to know that the time frame recommended, for example 15 days or 4 weeks, is the time frame that will be experienced. Knowing that those time frames will be adhered to is very helpful for planning purposes. Also, the change in the Visa Mantis requirements that allow graduate students to stay for up to fours years is another helpful improvement.

While the improvements have been noted, I offer several suggestions for continued improvements in the process. These recommendations have also been suggested by 25 scientific organizations and published in the February 2005 issues of Physics Today.

1. It would be very helpful if a researcher could be allowed to stay for the full expected duration of his/her experiment without the need for periodic extensions. For such researchers, re-entry provisions should allow the scientists to return to their homes or to attend conferences and meetings in other countries without fear of visa delays or difficulties when coming back to the U.S. to complete their assignment or work.

2. Longer visa periods or multiple entry visas for researchers should be considered because successful scientific collaboration is carried out by frequent visits.

3. Science and technology training for consular staff should be enhanced so that they might better understand the complexities of the scientific endeavors and the need for timeliness.

4. Researchers have expressed a desire to be able to more easily inquire about the status of their visas, and a mechanism for communication on visa status would be appreciated.

5. I suggest that a mechanism be put into place where a visa that has not been granted or acted upon within the normal timeframes (perhaps 30 days) be given priority for processing.

6. Lastly, I would like to endorse the “American Competitiveness Through International Openness Now Act of 2005” (S.455) that Senators Coleman and Bingaman recently introduced. This would help to remedy many of the remaining problems in the U.S. visa system that are impacting international students, scholars, scientists and engineers traveling to and from the United States. The bill would also help to counter the misperception that the United States is not a welcome place to study and conduct research. This is especially important as the U.S. is now competing for the world’s best scientific talent.

With continued improvements, the U.S. will retain its leadership in science, and international scientists will spread a positive attitude about their experiences within the U.S. The best scientists in the world will continue to conduct their research here. Our facilities and experiments that depend upon foreign collaboration will continue to be world class and produce world class science.

Thank you for the opportunity to discuss this most important issue today in this important setting.

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